

Claims

*Silly election of species*

1. A method to enhance bone formation or to treat pathological dental conditions or to treat degenerative joint conditions in a vertebrate animal which method comprises administering to a vertebrate subject in need of such treatment an effective amount of a compound that inhibits the activity of NF- $\kappa$ B or that inhibits proteasomal activity or that inhibits production of proteasome proteins.

2. The method of claim 1 wherein said compound inhibits proteasomal activity or inhibits production of proteasomal proteins.

3. The method of claim 1 wherein said compound does not inhibit the isoprenoid pathway.

4. The method of claim 1 wherein said compound is lactacystin, a peptidyl aldehyde, PTX, or epoxomicin.

5. The method of claim 1 wherein said subject is characterized by a condition selected from the group consisting of osteoporosis, bone fracture or deficiency, primary or secondary hyperparathyroidism, periodontal disease or defect, metastatic bone disease, osteolytic bone disease, post-plastic surgery, post-prosthetic joint surgery, and post-dental implantation.

6. The method of claim 1 which further comprises administering to said subject one or more agents that promote bone growth or that inhibit bone resorption.

7. The method of claim 6 wherein said agents are selected from the group consisting of bone morphogenetic factors, anti-resorptive agents, osteogenic factors,

cartilage-derived morphogenetic proteins, growth hormones, estrogens, bisphosphonates, statins and differentiating factors.

8. A method to treat a mammalian subject for a condition benefited by stimulating hair growth which method comprises administering to said mammalian subject in need of such treatment an effective amount of a compound that inhibits the activity of NF- $\kappa$ B or that inhibits proteasomal activity or that inhibits production of these proteins.
9. The method of claim 8 wherein said compound inhibits proteasomal activity or inhibits production of proteasome proteins.
10. The method of claim 9 wherein said compound is lactacystin, a peptidyl aldehyde, or epoxomicin.
11. A pharmaceutical composition for treating bone disorders, dental pathological conditions or degenerative joint conditions which composition comprises a compound that inhibits the activity of NF- $\kappa$ B or that inhibits proteasomal activity or that inhibits production of these proteins.
12. The pharmaceutical composition of claim 11 wherein said compound inhibits proteasomal activity or inhibits production of proteasomal proteins.
13. The pharmaceutical composition of claim 11 wherein said compound does not inhibit the isoprenoid pathway.
14. The pharmaceutical composition of claim 11 wherein said compound is lactacystin, a peptidyl aldehyde, PTX, or epoxomicin.

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15. A pharmaceutical composition for treating for a condition benefited by stimulating hair growth which composition comprises a compound that inhibits the activity of NF- $\kappa$ B or that inhibits proteasomal activity or that inhibits production of these proteins.

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16. The pharmaceutical composition of claim 15 wherein said compound inhibits proteasomal activity or inhibits production of proteasomal proteins.

17. The pharmaceutical composition of claim 15 wherein said compound is  
10 lactacystin, a peptidyl aldehyde, or epoxomicin.

18. A method to identify a compound which enhances bone growth or  
stimulates hair growth which method comprises subjecting said compound to an assay for  
determining its ability to inhibit NF- $\kappa$ B activity, whereby a compound which inhibits the  
15 activity of NF- $\kappa$ B is identified as a compound which enhances bone growth; or

subjecting said compound to an assay for determining its ability to inhibit the  
production of NF- $\kappa$ B, whereby a compound which inhibits the production of NF- $\kappa$ B is  
identified as a compound which enhances bone growth; or

subjecting a candidate compound to an assay to assess its ability to inhibit  
20 proteasomal activity, whereby a compound which inhibits proteasomal activity is  
identified as a compound that enhances bone growth; or

subjecting a candidate compound to an assay to assess its ability to inhibit the  
production of enzymes with proteasomal activity, whereby a compound which inhibits  
the production of enzymes with proteasomal activity is identified as a compound that  
25 enhances bone growth.

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